

ABSTRACT

A martensitic stainless steel comprising C: 0.01 – 0.10%, Si: 0.05 – 1.0%, Mn: 0.05 – 1.5%, P: not more than 0.03%, S: not more than 0.01%, Cr: 9 – 15%, Ni: 5 0.1 – 4.5%, Al: not more than 0.05% and N: not more than 0.1% in mass %, and further comprising at least one of Cu: 0.05 – 5% and Mo: 0.05 – 5%, the residual being Fe and impurities, is provided, wherein the contents of Cu and Mo satisfy the following formula (a) or (b),

$$0.2\% \leq \text{Mo} + \text{Cu}/4 \leq 5\% \quad \dots \text{(a)}$$

10 $0.55\% \leq \text{Mo} + \text{Cu}/4 \leq 5\% \quad \dots \text{(b)}$

and wherein the hardness is 30 – 45 in HRC and the carbide amount in grain boundaries of the prior austenite is not more than 0.5 volume %. The martensitic stainless steel has excellent properties regarding the sulfide stress cracking resistance, the resistance to corrosive wear and the localized corrosion.